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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,803	09/08/2000	Hajime Tabata	0505-0673P	2995

7590 08/11/2004

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Falls Church, VA 22040-0747

EXAMINER
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NGUYEN, DUC MINH

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 08/11/2004

23

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/657,803

Applicant(s)

TABATA ET AL.

Examiner

Duc Nguyen

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-11, 13-20, 22-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-11, 13-20 and 22-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-11, 14, 17, 19-23, 26, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakaya et al (5,684,884) in view of Szilagyi et al (6,396,197).

Consider claims 7, 10-11, 17, 19, 22-23. Nakaya teaches a piezoelectric speaker comprising a frame having an opening therein, the opening extending between a back and front surfaces of the frame (frame 10, fig. 3, fig. 5A-F; col. 7, ln. 40-54); a piezoelectric film having a surface area larger than the opening in the frame, the piezoelectric film being located on the back surface of the frame and covering the opening (piezoelectric sheet 4, figs. 1, 3), so that the central portion of the piezoelectric film is exposed to the front surface of the frame through the opening (see fig. 3). Nakaya further teaches a laminating film (fig. 1, 3; support layer 8) attached to the edges of the frame and covering an entire surface of the piezoelectric film (see fig. 3, 5A-F; element 8 attached to the edges of frame 10 and cover an entire surface of the piezoelectric sheet 4).

Nakaya does not teach a detachable fastener fastening the piezoelectric speaker to a inner surface of a helmet.

Szilagyi teaches a detachable fastener fastening the piezoelectric speaker to a surface of a helmet (abstract; col. 1, ln. 15-27, ln. 66 to col. 2, ln. 19, ln. 39-49; col. 5, ln. 28-48).

Art Unit: 2643

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Szilagyi into the teachings of Nakaya in order to provide a piezoelectric speaker that is easily secured to an existing structure.

Consider claim 8. Szilagyi further teaches the frame supports the piezoelectric film speaker in a curved state (fig. 1, frame 14 having base portion 20 and top portion 22).

Consider claim 9. Szilagyi further teaches the curvature of the frame has a radius of curvature in a range of 210mm to 360mm (fig. 8-9 show piezoelectric speakers being used in bicycle helmet which inherently has a radius of curvature in a range of 210mm to 360mm).

Consider claims 14, ~~24~~. Nakaya further teaches the limitations of this claim in (fig. 3, frame pieces (10); the piezoelectric element (4) is held by the pair of frame pieces (10) at the edges).

Consider claim 20. Szilagyi further teaches the frame supports the piezoelectric film speaker in a curved state (fig. 1, frame 14 having base portion 20 and top portion 22).

Consider claim 26. Nakaya clearly teaches the limitations of these claims in fig. 3.

Consider claim 28. Nakaya clearly teaches the limitations of these claims in fig. 3 (e.g., frame (10) can be detached/attached from/to the piezoelectric component (2)).

3. Claims 13, 15-16, 18, 24-25, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakaya et al (5,684,884) in view of Davis (6,345,102) and Szilagyi et al (6,396,197).

Consider claims 15-16, 18. Nakaya teaches a piezoelectric speaker comprising a frame having an opening therein, the opening extending between a back and front surfaces of the frame

Art Unit: 2643

(frame 10, fig. 3, fig. 5A-F; col. 7, ln. 40-54); a piezoelectric film having a surface area larger than the opening in the frame, the piezoelectric film being located on one side of the frame and covering the opening (piezoelectric sheet 4, figs. 1, 3). Nakaya further teaches a laminating film (fig. 1, 3; support layer 8) attached to the edges of the frame and covering an entire surface of the piezoelectric film (see fig. 3, 5A-F; element 8 attached to the edges of frame 10 and cover an entire surface of the piezoelectric sheet 4).

Davis teaches a laminating film (fixing material 32 does not overlap the opening of frame 26; col. 3, ln. 16-26) attached to the one side of the frame. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fixing material (32) as taught by Davis with the piezoelectric speaker as taught by Nakaya in order to securely hold the speaker to the sun visor (10). With this combination (Nakaya+Davis), the detachable fastener securely formed on the laminating film (32) at a position overlapping edges of the piezoelectric film but not overlapping the opening for fastening the piezoelectric speaker to a surface of a sun visor (10).

Nakaya in view of Davis does not teach a detachable fastener fastening the piezoelectric speaker to a inner surface of a helmet.

Szilagyi teaches a detachable fastener fastening the piezoelectric speaker to a surface of a helmet (abstract; col. 1, ln. 15-27, ln. 66 to col. 2, ln. 19, ln. 39-49; col. 5, ln. 28-48; col. 7, ln. 30-41). It is further noted that the laminating film (encapsulation layer 24 covers the piezoelectric film (electric wafers 26, 28) and the outer edges of the laminating film extends beyond outer edges of the piezoelectric film (see fig. 1).

Art Unit: 2643

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Szilagyi into the teachings of Nakaya in view of Davis in order to provide a piezoelectric speaker that is easily secured to an existing structure.

Consider claim 13. Szilagyi' col. 7, ln. 30-41 reads on the limitations of this claim.

Consider claims 24-25. With the combination of Nakaya and Davis (see the rejection of claim 18 above), the detachable fastener securely formed on the laminating film (32) at a position overlapping edges of the piezoelectric film but not overlapping the opening for fastening the piezoelectric speaker to a surface of a sun visor (10).

Consider claim 27. Nakaya clearly teaches the limitations of these claims in fig. 3.

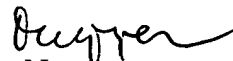
### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Nguyen whose telephone number is 703-308-7527. The examiner can normally be reached on 6:00AM-2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2643

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Duc Nguyen  
Primary Examiner  
Art Unit 2643

8/5/04